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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,943	10/22/2003	Leroy W. Ledgerwood III	024-34392	6187

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06/15/2005

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EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT

PAPER NUMBER

3672

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/690,943

Applicant(s)

LEDGERWOOD ET AL.

Examiner

Jennifer H. Gay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the last sentence of the abstract is considered to be purported merits. Correction is required. See MPEP § 608.01(b).

2. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, 6, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Scales (US 3,922,038).

Regarding claim 1: Scales discloses an earth boring bit that includes the following features:

- A bit body **11** having at least one leg **13**.
- A cone shell **23** rotatably mounted on the bit leg.
- At least on circumferential row of compacts **25** protruding from the shell (Figure 1).
- A depression in the cone shell extending between each of the compact in the row.

Regarding claim 4: Each of the compacts is mounted in a hole (not shown) formed in the cone shell. Each of the depressions extends in a plane from an intersection of one hole with an exterior of the cone shell to an intersection of an adjacent hole with an exterior of the cone shell.

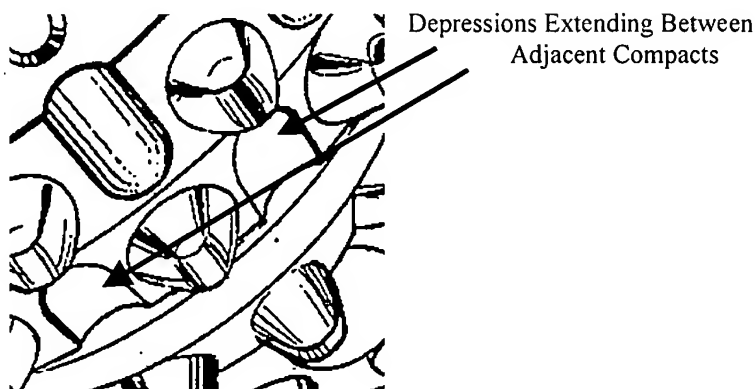
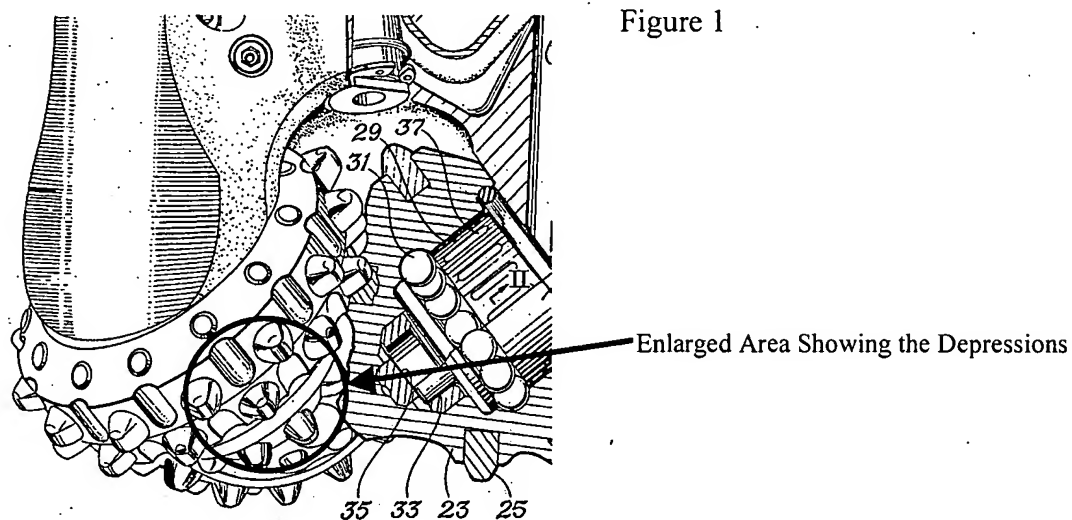
Regarding claim 6: Scales discloses an earth boring bit that includes the following features:

- A bit body **11** having at least one leg **13**.
- A cone shell **23** rotatably mounted on the bit leg.
- A plurality of holes (not shown) formed in circumferential row on conical bands of the shell (Figure 1).
- A compact **25** mounted in each hole.
- A plurality of depressions in the cone shell extending between adjacent holes in at least one of the rows.

Regarding claim 8: Each depression has a leading and trailing end that intersects adjacent holes. The ends have an axial dimension that is not greater than a diameter of the adjacent holes.

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Regarding claim 9: The conical band that contains the depressions has a conical portion axially inward and outward of each of the holes relative to an axis or rotation of the cone.



5. Claims 1-4, 6-9, 11, and 13-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Cisneros et al. (US 5,868,213).

Regarding claim 1: Cisneros et al. discloses an earth boring bit that includes the following features:

- A bit body 12 having at least one leg 19.
- A cone shell 14-16 rotatably mounted to each bit leg.
- At least one circumferential row 60, 70, 80 of compacts protruding from the cone shell.

- A depression **79** in the cone shell extending between each of the compact rows.

Regarding claims 2, 3, 7, 11: Each of the depressions is a flat surface (Figure 5) located in a plane that is perpendicular to a radial line of an axis of rotation of the cone that extends between adjacent compacts.

Regarding claim 4: Each of the compacts is mounted in a hole (not shown) formed in the cone shell. Each depression extends in a plane of intersection of one hole with an exterior of the cone shell to an intersection of an adjacent hole in the row with an exterior of the cone shell.

Regarding claim 6: Cisneros et al. discloses an earth boring bit that includes the following features:

- A bit body **12** having at least one leg **19**.
- A cone shell **14-16** rotatably mounted to each bit leg.
- A plurality of holes formed in circumferential rows **60, 70, 80** on conical bands of the cone shell.
- A compact **60a, 70a, 80a** mounted in each of the holes.
- A plurality of depressions **79** in the cone shell extending between adjacent holes in the rows.

Regarding claim 8: Each depression has a leading and trailing end that intersects adjacent holes. The ends have an axial dimension that is not greater than a diameter of the adjacent holes.

Regarding claims 9, 16: The conical band that contains the depressions has a conical portion axially inward and outward of each of the holes relative to an axis of rotation of the cone.

Regarding claim 13: Cisneros et al. discloses an earth boring bit that includes the following features:

- A bit body **12** having at least one leg **19**.
- A cone shell **14-16** rotatably mounted to each bit leg.
- A plurality of holes formed in circumferential rows **60, 70, 80** on conical bands of the cone shell.

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- A compact **60a**, **70a**, **80a** mounted in each of the holes where each compact has a barrel and a cutting tip.
- A plurality of flats **79** in the cone shell extending between adjacent holes in the rows. Each of the flats has circumferentially spaced-apart ends that intersect adjacent holes and has a midpoint between the ends that is located on a radial line of the cone axis where each flat is perpendicular to that line.

Regarding claim 14: Each flat has an axial width at the midpoint that is less than an axial width of the conical band on which it is located.

Regarding claim 15: The end of each of the flats has an axial dimension that is greater than a diameter of the adjacent holes.

Regarding claim 17: Each of the holes has a constant depth measured at any point around the sidewall of the hole.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scales.

Regarding claims 5 and 10: Scales discloses all of the limitations of the above claims except for the depressions being generally elliptical.

However, it would have been an obvious matter of design choice to form the depressions of Scales in a generally elliptical shape, since applicant has not disclosed that an elliptical shape solves any stated problem or is for any particular purpose and it appears that the invention would equally well with the disclosed shape or an elliptical shape.

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Regarding claim 12: Scales discloses all of the limitations of the above claims except for forming the depressions on all of the rows of the cone.

However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the depressions of Scales on all of the disclosed rows in order to have provided flow paths for drill cutting and drill fluid past all of the cutting elements thus prolonging the life of each cutter and the bit.

8. Claims 5, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cisneros et al.

Regarding claims 5 and 10: Cisneros et al. discloses all of the limitations of the above claims except for the depressions being generally elliptical.

However, it would have been an obvious matter of design choice to form the depressions of Cisneros et al. in a generally elliptical shape, since applicant has not disclosed that an elliptical shape solves any stated problem or is for any particular purpose and it appears that the invention would equally well with the disclosed shape or an elliptical shape.

Regarding claim 12: Cisneros et al. discloses all of the limitations of the above claims except for forming the depressions on all of the rows of the cone.

However, it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have formed the depressions of Cisneros et al. on all of the disclosed rows in order to have provided flow paths for drill cutting and drill fluid past all of the cutting elements thus prolonging the life of each cutter and the bit.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

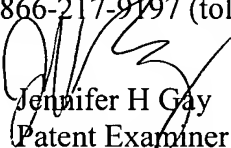
The remaining references made of record disclose various wellbore drill cutter cones.

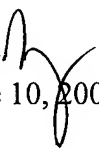
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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H. Gay whose telephone number is (571) 272-7029. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jennifer H Gay
Patent Examiner
Art Unit 3672

JHG 
June 10, 2005